

# Nuclear Security

## INCREASING THE EFFECTIVENESS OF THE SECURITY SYSTEM ON A NUCLEAR FACILITY

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A.C.A. Vaz<sup>a</sup>, T.N. Conti and D.A. Andrade

<sup>a</sup> [acavazmath@gmail.com](mailto:acavazmath@gmail.com)

Nuclear and Energy Research Institute, São Paulo, Brazil

The malicious use of radioactive material could be devastating, particularly in the case of a nuclear explosive device, it could be unpredictably disruptive resulting in the dispersal of radioactive material, like it was in the Fukushima Daiichi Nuclear Power Plant disaster. Physical Protection System (PPS) plays an important role in ensuring that individuals, organizations and institutions remain vigilant and that sustained measures are taken to prevent and combat the threat of sabotage or of using radioactive material for malicious acts. PPS is an integrated system of people, equipment and procedures used to protect nuclear facilities and radioactive sources against threat, theft or sabotage. In the operator's perspective, this paper study factors influencing the performance of a PPS in a nuclear facility suggesting ways to increase the system effectiveness. The human factor, the physical and the psychological work environment has a large impact on how personnel perform their work and comply with nuclear security requirements. Apathy and corporatism are two human behaviors that collaborate negatively and make decrease the effectiveness of any PPS. Job satisfaction reduces the probability that personnel will become less reliable and/or obstructive in extreme cases an insider threat. Managers must recognize individual and group needs and the relationship among personnel so that they may motivate personnel by creating a supportive working environment that reduces workplace stress. An effective PPS can result in a significant increase in the effectiveness of the security of radioactive material and associated facilities.

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